

## ABSTRACT

To enable detection of flow of a distant fluid to be measured to provide a new application of a PIV system at a practical level.

5        A fluid measurement system of the present invention includes a long focus optical system 3 at a CCD camera 2, and an image processing means 43 for comparing particle images taken at two time points for analysis. The system further includes a high-pass filter for leaving high frequency components at a predetermined frequency and higher from the luminance  
10      signal of the image, so that a turbulence structure occurring in the fluid to be measured is extracted, and the turbulence structure is captured and its image is taken. Therefore, the flow field of an inaccessible fluid to be measured can be analyzed.